CUSTOMER NO.: 24498
Serial No.: 10/584,654
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PATENT
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Remarks/Arguments

With the addition above of new claims 17-20, claims 1-20 are currently pending in the present application. Claims 1-16 have been amended above to correct informalities and to better clarify the claimed invention.

No new matter is introduced herein.

Claim Objections

Claims 1-16 were objected to for missing an appropriate article or antecedence indicator before each occurrence of the term "method" or "apparatus" at the beginning of each claim. Applicants respectfully submit that the above amendments to the claims overcome any such grounds for objection.

Claim Rejections – 35 USC § 102

Claims 1-3, 8-11 and 16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,304,878 to Karlov et al. (hereinafter "Karlov"). For the reasons stated below, Applicants respectfully submit that this rejection does not apply to the claims as amended herein.

Independent claims 1 and 9 have been amended above to make clear that the searching of a database on a disk storage medium is carried out in first and second search steps in such a way that in the first search step, an uninterrupted reading-in of disk sectors and a searching of database records in said disk sectors are performed. The searching is performed with a search depth matched to the speed of the reading-in of disk sectors so that the reading-in of disk sectors is not interrupted. As such, in the first search step, while reading-in disk sectors, at least part of the remaining processing power is used to perform a preliminary search with a limited search depth on the data that has been read-in. As a result, the reading-in of disk sectors is as fast as possible and the second search step only needs to search the intermediate results derived from the preliminary search. This allows for very fast availability of search results.

Karlov describes a method and system for arranging lexical data for searching. Fig. 1 of Karlov depicts a general purpose computer for executing software

implementing the described method, having, as general purpose computers commonly do, an optical disk drive (30) for reading/writing data to/from removable optical disks (31). Thus Karlov, like the claimed invention, refers to searching and disk storage media. That's where the similarities end.

Unlike the claimed invention, Karlov does not describe the reading-in of disk sectors and the initial searching of the disk sectors read-in with a search depth matched to a speed of the reading-in of disk sectors such that the reading-in of disk sectors is not interrupted. In fact, Karlov does not even mention disk sectors.

Furthermore, lexical searching as described in Karlov is in no way related to reading-in and searching disk sectors, let alone to the reading-in and the two-step searching of disk sectors as recited in independent claims 1 and 9. Rather, lexical searching as contemplated by Karlov entails procedures for searching data specifically organized as words in accordance with relationships dictated by language. The reading-in and searching of disk sectors, as in the claimed invention, is agnostic as to any lexical organizational structure of the data contained in said sectors.

For the aforementioned reasons, therefore, Applicants respectfully assert that independent claims 1 and 9 are not anticipated by Karlov. As such, claims 2, 3, 8, 10, 11 and 16, which depend therefrom and recite additional limitations, are likewise not anticipated by Karlov, for at least the reasons stated above. The rejection of claims 1-3, 8-11 and 16 under 35 U.S.C. § 102(b) should therefore be withdrawn.

Claim Rejections – 35 USC § 103

Claims 4 and 12

Claims 4 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlov in view of U.S. Patent Application Publication No. 2006/0161492 A1 to Bettis et al. (hereinafter "Bettis"). Applicants respectfully disagree for the following reasons.

The Examiner relies on Bettis as teaching a method wherein a first search step involves skipping to search locations from an index list in descending or ascending order on the basis of sorting exclusively according to sector numbers (Office Action, page 4).

Applicants respectfully submit that the Examiner has misunderstood the meaning of the term "sector" as used in Bettis. Bettis describes methods of evaluating the performance of investors in various industry sectors. Industry sectors are simply different categories or types of industries. The financial, automotive and technology sectors are examples of "industry sectors". Bettis does not teach searching disk sectors, let alone as contemplated by the claimed invention.

Moreover, Bettis does not overcome any of the deficiencies of Karlov discussed above in connection with independent claims 1 and 9.

For the foregoing reasons, Applicants respectfully assert that claims 4 and 12 are not rendered unpatentable by Karlov in view of Bettis. The rejection of claims 4 and 12 under 35 U.S.C. § 103(a) should therefore be withdrawn.

Claims 5 and 13

Claims 5 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlov in view of U.S. Patent No. 5,850,547 to Waddington et al. (hereinafter "Waddington"). Applicants respectfully disagree for the following reasons.

The Examiner relies on Waddington as allegedly teaching a method, "wherein the intermediate result comprises one or more subresults which are respectively searched in the second search step." (Office Action, page 6.)

Waddington describes a method and apparatus for parallel processing aggregate functions in which a set of data is partitioned into multiple subsets, where each subset is allocated to one of multiple processes which performs an intermediate aggregation yielding one intermediate aggregation value for each subset. The multiple intermediate aggregation values are then redistributed to a second set of processes for final processing to generate the final aggregation values. (See Waddington, e.g., at col. 5, lines 8-31.)

Unlike the claimed invention, Waddington is not concerned with searching a database on a disk storage medium. Waddington does not describe the reading-in of disk sectors and the initial searching of the disk sectors read-in with a search depth matched to a speed of the reading-in of disk sectors such that the reading-in of the disk sectors is not interrupted. Like Karlov, Waddington does not even mention disk sectors.

Moreover, even if Waddington teaches what the Examiner alleges it teaches, Waddington would not overcome the deficiencies of Karlov discussed above in connection with independent claims 1 and 9.

For the foregoing reasons, Applicants respectfully assert that claims 5 and 13 are not rendered unpatentable by Karlov in view of Waddington. The rejection of claims 5 and 13 under 35 U.S.C. § 103(a) should therefore be withdrawn.

Claims 6 and 14

Claims 6 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlov in view of U.S. Patent No. 6,760,542 to Saeijs et al. (hereinafter "Saeijs"). Applicants respectfully disagree for the following reasons.

The Examiner relies on Saeijs as supposedly teaching a method "wherein the database is dynamic and is available in fragmented form and in this context the individual fragments are read in successively and a read head skips exclusively in one direction between the fragments." (Office Action, page 8.)

The portion of Saeijs on which the Examiner relies (col. 11, lines 8-16), however, does not support this assertion. Saeijs describes a method and apparatus for the simultaneous recording and reproduction of a real time information signal, such as a digital video signal, on a disk-like record carrier. The portion of Saeijs on which the Examiner relies simply points out that the time for reading three disk segments (x, y and z) can be decreased by re-ordering the read steps so that the time needed to reach and read the segments, including jump times between reading the segments as well as the jump time to the next writing location, is minimized. There is no mention, however, that the read head skips exclusively in one direction between segments, as explicitly required in claims 6 and 14. While Saeijs recognizes that large jumps in the radial direction are undesirable, this in no way suggests that the read head is to skip in one direction.

Moreoever, Saeijs is not concerned with searching a database, but rather writing real-time data onto a disk segment and then immediately reading the data back so as to effect what is perceived as simultaneous recording and reproduction of the data. As such, Saeijs does not overcome the deficiencies of Karlov discussed above in connection with independent claims 1 and 9.

For the foregoing reasons, Applicants respectfully assert that claims 6 and 14 are not rendered unpatentable by Karlov in view of Saeijs. The rejection of claims 6 and 14 under 35 U.S.C. § 103(a) should therefore be withdrawn.

Claims 7 and 15

Claims 7 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlov in view of U.S. Patent Application Publication No. 2003/0200404 to Wicki et al. (hereinafter "Wicki"). Applicants respectfully disagree for the following reasons.

The Examiner relies on Wicki as teaching a method wherein data is stored on a disk storage medium in ECC blocks. Even if this is the case, Wicki, which relates to cache storage systems and methods, does not overcome the multiple deficiencies of Karlov discussed above in connection with independent claims 1 and 9.

For the foregoing reasons, Applicants respectfully assert that claims 7 and 15 are not rendered unpatentable by Karlov in view of Wicki. The rejection of claims 7 and 15 under 35 U.S.C. § 103(a) should therefore be withdrawn.

New claims 17-20

Support for new claims 17-20 can be found in the Specification (see, e.g., p. 4, lines 11-23, p. 7, lines 14-30 and the Figure, for claims 17 and 19; p. 6, lines 8-16, for claims 18 and 20.) The prior art of record does not describe a method or apparatus for searching a database on a disk storage medium as recited in independent claims 1 and 9, in which the first and second searching steps are executed in parallel (claims 17 and 19), with the first searching step having a higher priority than the second searching step (claims 18 and 20).

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Conclusion

In view of the amendments and remarks presented herein, Applicants respectfully assert that all pending claims, claims 1-20, are in condition for alowance. Prompt consideration and advancement of the present application to allowance are earnestly solicited.

Please charge the $130.00 fee for the Petition for a One Month Extension, and any other costs that may be due, and/or credit any overpayment, to Account No. 07-0832.

Respectfully submitted,

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